REMARKS

The Applicants have carefully considered the official action of May 17, 2010. By way of this Response, claims 1, 9, 17, 25, 37, 39 and 40 have been amended. Claims 6, 14, 22, 30 and 38 were canceled in a prior response. Claims 1-5, 7-13, 15-21, 23-29, 31-37 and 39-42 are pending, of which claims 1, 9, 17, 25, 37 and 40 are independent. The Applicants respectfully submit that all claims are fully supported and that no new matter has been added. In view of the foregoing amendments and the following remarks, the Applicants respectfully request reconsideration of this application.

The Rejections under 35 U.S.C. §112, Second Paragraph

The official action rejected claims 40-42 under 35 U.S.C. §112, second paragraph as allegedly indefinite.

By way of this response, claim 40 has been amended to remove the language "relative similarity to the base level variable." Accordingly, any issues related to clarity that may have existed have been abated.

Thus, for at least the foregoing reasons, the Applicants respectfully submit that the rejections under 35 U.S.C. §112, second paragraph, be withdrawn.

The Rejections under 35 U.S.C. §101

Claims 37, 39 and 40-42 were rejected under 35 U.S.C. §101 as directed to non-statutory subject matter. The official action dated May 17, 2010 states that, for a method to be considered a "process" under 35 U.S.C. §101 (i.e., for a method to be statutory), it must be tied to a particular machine or transform a particular article to a different state or thing. *See official action*, page 3, item 7. Claims 37, 39 and 40-42 are method claims and the Applicants respectfully submit that such claims are tied to particular machines. In particular, independent claims 37 and 40 are tied to, in part, a base segmentation tree defining module and a substitute split value determining module to perform the claimed procedures.

The official action argues that reciting a computer system is considered a nominal tie and insignificant extra solution activity that does not satisfy the (§101) requirement. The test for determining whether claims recite statutory subject matter is the machine-or-

transformation test set forth by the Federal Circuit in *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008). *Bilski's* machine-or-transformation test provides that a method claim is statutory under 35 U.S.C. § 101 when the claim is either tied to a particular machine or transforms an article. *Id.* at 961. Thus, *Bilski's* machine-or-transformation test plainly provides two alternative ways in which a method claim may be found statutory.

Claims 37 and 40 now recite computer implemented methods that include a base segmentation tree defining module and a substitute split value determining module. Thus, the recited methods include use of a machine. These claims clearly meet the first prong of *Bilski's* machine-or-transformation test because the methods of these claims are tied to a particular machine. Therefore all the claims recite statutory subject matter. Accordingly, withdrawal of the rejections under 35 U.S.C § 101 is respectfully requested.

The Rejections Under 35 U.S.C. §103(a)

In the official action, claims 1-5, 7-13, 15-21, 23-29, 31-37 and 39-42 were rejected as being unpatentable over Miller et al. (U.S. Patent Application No. 2002/0184077 A1, hereinafter "Miller") in view of Christiansen et al. (U.S. Patent No. 6,202,053, hereinafter "Christiansen"). The Applicants respectfully traverse this rejection.

Claim 1

Independent claim 1 recites, *inter alia*, defining a base level segmentation tree with a base level data set at a first top level node, defining a set of alternative level variables associated with an alternative level data set at a second top level node having an alternative precision different than the base level data set, and determining substitute split values for each subsequent node of the substitute level tree based on the base level data set at the first top level node and the alternative level data set at the second top level node.

As explained below, neither Miller nor Christiansen teaches or suggests defining a base level segmentation tree with a base level data set at a first top level node, defining a set of alternative level variables associated with an alternative level data set at a second top level node, and determining substitute split values for each subsequent node of the substitute level tree. Thus, no combination of these references can result in such a recitation.

Miller describes a method for classifying consumers in clusters of similar behavioral and demographic characteristics. *Miller*, Abstract. Consumer cluster sets are generated by

generating classification trees based on demographic and behavioral data, in which consumers in each cluster have substantially similar behavioral and demographic characteristics to each other, but different behavioral and demographic characteristics from consumers in other clusters. *Miller*, paragraphs [0018] and [0019]. To identify an optimal combination resulting in a set of terminal nodes, Miller employs a partitioning program to optimize a segmentation based on behavioral and demographic factors. *Miller*, paragraph [0020].

Miller also describes examples of classification trees in FIGS. 3 and 4, where a population at Node 1 is split based on Decision 1 into populations at Node 2 and Node 3. *Miller*, paragraph [0021], FIG. 2. Although the population at Node 1 may be fairly construed as a base level data set at a first top level node, Miller fails to teach or suggest an alternative level data set at a second top level node, as recited in claim 1. To the extent that Miller describes additional or alternate classification trees, such trees employ "the same population in Node 1" that are "split into populations at Node 2 and Node 3 based on a different decision." *Miller*, paragraph [0022], FIG. 3. In other words, Miller does not use or suggest the use of a first top level node and a second top level node.

Additionally, because Miller fails to teach or suggest a base level data set at a first top level node and a second alternative level data set at a second top level node, Miller necessarily fails to teach or suggest determining substitute split values for each subsequent node of the substitute level tree based on the base level data set at the first top level node and the alternative level data set at the second top level node. Instead, Miller describes starting with a given population and yielding splits in that population via different decisions (see the Decisions beneath each Node in FIGS. 3 and 4 of *Miller*). Such decisions are not alternative level variables because, at least, Miller does not describe any circumstance in which one or more trees may have a different level of precision or based on more than one top level node. As such, Miller appears unrelated to determining substitute split values of a substitute level tree based on the base level data set at the first top level node and the alternative level data set at the second top level node.

Christiansen also fails to teach or suggest defining a base level segmentation tree with a base level data set at a first top level node, defining a set of alternative level variables associated with an alternative level data set at a second top level node, and determining substitute split values for each subsequent node of the substitute level tree based on the base

level data set at the first top level node and the alternative level data set at the second top level node.

Christiansen describes a method to segment a given population based on specific factors related to credit. *Christiansen*, 2:63 through 3:4. The credit related factors include a length of credit history and/or credit delinquency, all of which may be used in a tree structure. *Christiansen,* 3:12-22, 3:23-41, and FIG. 1. As divisions of the tree occur, sub-populations (segments) result that either match the deciding factor or do not match the deciding factor. *Christiansen*, 5:46-52. Based on each segment, Christiansen develops custom scorecards for credit applicants, which are useful for financial institutions. *Christiansen*, 5:34-45. The financial institutions use the custom scorecards to identify applicant credit risks in corresponding segments. *Christiansen*, 1:64 through 2:5.

The instant official action contends that Christiansen describes a substitute precision different from the base precision. *Christiansen*, FIG. 4. Christiansen shows a breakdown of eight defined sub-populations from a representative sample, in which the scorecard of FIG. 4 was tailored to [analyze] the members in the sub-population to which it pertained. *Christiansen*, 5:25-34. Similar to Miller, Christiansen's representative sample may be fairly construed as a base level data set at a first top level node, in which FIG. 4 illustrates a breakdown of that sample by raw numbers, but Christiansen fails to identify any circumstance in which a separate representative sample is considered, such as an alternative level data set at a second top level node having an alternative precision.

In other words, Christiansen does not consider a degree of precision of the whole segmentation tree itself as distinguished over another segmentation tree. Additionally, Christiansen does not consider a degree of precision of the originating data set with which a segmentation tree is generated as distinguished over another originating data set having an alternative precision. Instead, Christiansen illustrates segmentation trees in FIGS. 1, 2, 6 and 7 in which a total population (see element 12 in FIGS. 1 and 2, also see element 212 in FIGS. 6 and 7) is the source for any further branching. Christiansen explicitly identifies that the total population (12) includes 100 percent of the representative sample from which each segment represents a portion of that sample. *Christiansen*, 4:36-42. Conversely, independent claim 1 recites a base level data set at a first top level node and an alternative level data set at a second top level node having an alternative precision different than the base level data set.

Accordingly, at least because Christiansen fails to teach or suggest defining a base level segmentation tree with a base level data set at a first top level node, defining a set of alternative level variables associated with an alternative level data set at a second top level node having an alternative precision different than the base level data set, and determining substitute split values for each subsequent node of the substitute level tree based on the base level data set at the first top level node and the alternative level data set at the second top level node, no combination of Christiansen and Miller can result in the recited subject matter. For at least the reasons discussed above, the Applicants maintain that Miller and Christiansen are references that, either alone or in combination, cannot render the claimed subject matter obvious. Reconsideration is respectfully requested.

Claims 9, 17, 25, 37 and 40

The Applicants also submit that independent claims 9, 17, 25, 37 and 40 are allowable over the art of record.

Claim 9

Independent claim 9 relates to a system for segmenting a population and recites, in part, means for defining a base level segmentation tree having a base level data set at a first top level node with a base precision, means for defining a set of alternative level variables associated with an alternate level data set at a second top level node having an alternate precision different than the base level data set, and means for determining substitute split values for each subsequent node of the substitute level tree based on the base level data set at the first top level node and the alternative level data set at the second top level node. The Applicants respectfully submit that the cited art fails to teach or suggest such a system, as recited in claim 9.

Claim 17

Independent claim 17 relates to a software system to execute on a computer system for segmenting a population and recites, in part, defining a base level population segmentation tree associated with a base level data set at a first top level node having a base precision, defining a set of alternative level variables associated with an alternative level data set at a second top level node having an alternative precision different than the base level data

set, and determining substitute split values for each subsequent node of the tree based on the base level data set at the first top level node and the alternative level data set at the second top level node. The Applicants respectfully submit that the cited art fails to teach or suggest such a system, as recited in claim 17.

Claim 25

Independent claim 25 relates to a machine accessible medium having instructions stored thereon and recites, in part, defining a base level segmentation tree with a base level data set at a first top level node having a base precision, defining a set of alternative level variables associated with an alternative level data set at a second top level node having an alternative precision different than the base level data set, and determining substitute split values for each subsequent node of the tree based on the base level data set at the first top level node and the alternative level data set at the second top level node. The Applicants respectfully submit that the cited art fails to teach or suggest such a machine accessible medium, as recited in claim 25.

Claim 37

Independent claim 37 relates to a computer implemented method to segment a population and recites, in part, receiving a base level data set at a first top level node having a first precision, receiving an alternate data set at a second top level node having a second precision different from the first precision of the base level data set, and defining alternate level variables based on the base level data set at the first top level node and the alternate level data set at the second top level node. The Applicants respectfully submit that the cited art fails to teach or suggest such a computer implemented method, as recited in claim 37.

Claim 40

Independent claim 40 relates to a computer implemented method to segment a population and recites, in part, receiving a base level data set at a first top level node having a first precision, receiving an alternate level data set at a second top level node having a second precision, and outputting an alternate level segmentation tree based on the base level data set at the first top level node and the alternate level data set at the second top level node. The Applicants respectfully submit that the cited art fails to teach or suggest such a computer implemented method, as recited in claim 40.

For at least the foregoing reasons, independent claim 1, 9, 17, 25, 37 and 40, and claims dependent therefrom, are allowable over the cited art.

Conclusion

Reconsideration of the application and allowance thereof are respectfully requested. In the event that the Examiner would like to discuss the aforementioned claims, or any other matter, the Examiner is invited to contact the undersigned representative at the telephone number set forth below.

Before closing, the Applicants note that at least the amendments to claims 1, 9, 17, 25, 37, 39 and 40 made by way of this Response are either broadening or clarifying and, thus, not necessary for patentability. These amendments are either broadening, or are merely clarifying in that the amended claims are intended to state the same thing as the claim was intended to state prior to amendment (i.e., to have the same scope both before and after the amendments). In particular, claims 1, 9, 17 and 25 are amended to recite "subsequent" to further clarify one or more references to "node" or "nodes." Additionally, claims 37, 39 and 40 are amended to recite "sub-node" to further clarify one or more references to the first or second top level nodes. Consequently, these broadening or clarifying amendments to not give rise to prosecution history estoppels or limit the scope of equivalents of the claims under the doctrine of equivalents.

Generally speaking, the official action makes various statements regarding the pending claims and the cited references that are now moot in light of the above Remarks. Thus, the Applicants will not address such statements at the present time. However, the Applicants expressly reserve the right to challenge such statements in the future should the need arise (e.g., if such statement should become relevant by appearing in a rejection of any current or future claim).

The Commissioner is hereby authorized to refund any overpayment and charge any deficiency in the amount provided or any additional fees which may be required during the pendency of this application under 37 C.F.R. §1.16 or 1.17 to Deposit Account No. 50-2455.

Respectfully submitted,

HANLEY, FLIGHT & ZIMMERMAN, LLC
150 South Wacker Drive
Suite 2100
Chicago, Illinois 60606

November 17 , 2010

/Peter J. Cesarz/

Peter J. Cesarz
Registration No. 61,190
Attorney for the Applicants